IN THE CLAIMS: FEB 0 1 2001 S

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NCELLED lease amend Claims 29 and 33 to read as follows:

29. (Twice Amended) An isolated polynucleotide for diagnosing hereditary

hemochromatosis comprising at least 8 consecutive bases and up to about 100 consecutive bases of the sequence shown in SEQ/D NOS:1 or 2, or the complement thereof, wherein said isolated polynucleotide includes at least one polymorphic site shown in Table 1.

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33. (Twice Amended) An isolated polynucleotide for diagnosing hereditary

hemochromatosis comprising at least 18 consecutive bases and up to about 100 consecutive

bases of the sequence shown in SEQ ID NOS:1 or 2, or the complement thereof, wherein said

isolated polynucleotide includes at least one polymorphic site shown in Table 1.

Please add new Claims 49-79:

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- 49. (New) An isolated polynucleotide consisting of at least 8 consecutive bases and up to about 100 consecutive bases of the sequence shown in SEQ ID NOS:1 or 2, or the complement thereof, wherein said isolated polynucleotide includes at least one polymorphic site shown in Table 1.
- 50. (New) The isolated polynucleotide of Claim 49, wherein the polymorphic site is at base 61465 of SEO ID NO:1.
- 51. (New) The isolated polynucleotide of Claim 49, wherein the polymorphic site is at base 35983 of SEQ ID NO:1.

- 52. (New) A pair of isolated polynucleotides as in Claim 49.
- 53. (New) A kit comprising an isolated polynucleotide of Claim 49.
- 54. (New) A kit comprising at least one pair of isolated polynucleotides as in Claim
 52.

55. (New) An isolated polynucleotide consisting of at least 18 consecutive bases and up to about 100 consecutive bases of the sequence shown in SEQ ID NOS:1 or 2, or the complement thereof, wherein said isolated polynucleotide includes at least one polymorphic site shown in Table 1.

- 56. (New) The isolated polynucleotide of Claim 55, wherein the polymorphic site is at base 61465 of SEO ID NO:1.
- 57. (New) The isolated polynucleotide of Claim 55, wherein the polymorphic site is at base 35983 of SEO ID NO:1.
 - 58. (New) A pair of isolated polynucleotides as in Claim 55.
 - 59. (New) A kit comprising an isolated polynucleotide of Claim 55.
- (New) A kit comprising at least one pair of isolated polynucleotides as in Claim

61. (New) An isolated polynucleotide consisting of a fragment of at least about 100 consecutive bases and up to about 235 consecutive kilobases of the sequence shown in SEQ ID NOS:1 or 2, or the complement thereof, wherein said isolated polynucleotide includes at least one polymorphic site shown in Table 1.

62. (New) The isolated polynucleotide of Claim 61 which is cDNA.

63. (New) The isolated polynucleotide of Claim 61 which is RNA.

64. (New) The isolated polynucleotide of Claim 61 which is genomic DNA.

65. (New) An isolated polynucleotide consisting of a fragment of at least about 300 consecutive bases and up to about 235 consecutive kilobases of the sequence shown in SEQ ID NOS:1 or 2, or the complement thereof, wherein said isolated polynucleotide includes at least one polymorphic site shown in Table 1.

- 66. (New) The isolated polynucleotide of Claim 65 which is cDNA.
- 67. (New) The isolated polynucleotide of Claim 65 which is RNA.
- 68. (New) The isolated polynucleotide of Claim 65 which is genomic DNA.
- 69. (New) An isolated polynucleotide comprising at least 8 consecutive bases and up to about 100 consecutive bases of the sequence shown in SEQ ID NOS: 1 or 2, or the

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FEB 0 1 200 CR complement thereof, wherein with iso ared polynucleotide includes at least one polynucleotide includes at least one polynucleotide

Tiple selected from the group consisting of polymorphic sites listed in the following table:

CANCELLED POLYMORPHIC SITE POLYMORPHISM IN SEO ID NO:1 T-C 841 TT DEL 2662-2663 3767 T-C 3829 C-G 4925-4928 TAAA DEL 5691 C-T 5839 T-C 6011 G-A 6047 C-G 6231 G-A 6643 ADEL T-C 6698 7186 T-C G-A 7273 TCACACACCGATTGG DEL (SEQ ID NO:17) 7545-7558 7672 G DEL 7933 T-C T-G 9115 G-A 9823 G-A 10027 G-A C-T 10828 A-G C-G 10918 10955 A-G 11524 C-A 11674 A-G 11955 T-C 12173-12175 TTT DEL 13304 G-A 13455 G-A 14416-14417 A INS 14998 C-T T-C 15564 15887 A-G 15904-1 5919 CCAAACTGATCTTTGA DEL (SEQ ID NO:18) TDEL 16019 16211 A-T 17461 A-G 19755 G-A C-T 19949 C-T 20085 20366-20367 A INS C-A 20463

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POLYMORPHISM POLYMORPHISM IN SEQ ID NO:1	_ /~	žę.
N SEQ ID NO:1 N SEQ ID NO:1	FEB 0 1	2001 8
N SEQ ID NO:	,	, Si
N SEQ ID NO:	- A Characana and a characana	BOY WAS DELICA
	IN SECTION OF	POLYMORPHISM
A-G 21(837		A-T
22 22 36 6 C-A 22 30 9 G-A 24 43 T-A 26 7 G-C 26667 C-A 26994 T-C 26994 T-C 27838 G-T 2786 T-DEL 28132 G-A 29100 G-A 29454-2947 TTT DEL 29354-2947 TTT DEL 29825 A-C 30009 T-C 30177 A-G 30400 A-G 30400 A-G 31059 T-A 31280 C-T 33017 T-G 33018 C-T 33019 T-DEL 34434 C-T 35695 A-G 34434 C-T 35702 G-M 358526 C-T 40431 C-A 42054-42055 TT-DEL 43783-43784 TTTTINS 45120 C-DEL 45567 A-C 46601 A-T 47255 C-G 47798 C-C 48680 A-G 50553 G-A 50553 G-A 50553 G-A 50556 G-T 51322 G-C 51747 A-G 52474 C-G 52733 C-A 52734 C-G 52734 C-G 52735 C-A 52735 C-A 52736 C-C 52737 C-C		
223\(\) G		
22366 C-A 23069 G-A 2414 T-A 26173 G-C 26667 C-A 26994 T-C 27838 G-T 27861 T DEL 28132 G-A 29100 G-A 29454-29437 TTIT DEL 29787 T-G 29825 A-C 30009 T-C 30177 A-G 30400 A-G 31059 T-A 31280 C-T 31280 C-T 31390 C-T 33017 T-G 33017 T-G 33026 T-DEL 33040 C-G 33017 T-G 33026 T-DEL 33017 T-G 33026 T-DEL 34434 C-T 35179 A-G 35993 A-G 35983 A-G 35983 A-G 37411 A-G 40541 C-A 40541 C-A 40541 C-A 40542 C-D 45567 A-C 46601 A-T 47255 C-G 47798 C-A 47799 G-C 48660 A-G 48660 A-G 50553 G-A 50553 G-	22293	A-C
T.A C.A C.A	22786	C-A
2617 G-C		
26667		
T.C		
278.88 G.T 278.61 T.DEL 281.32 G.A 29100 G.A 2914.54.29447 T.T.T.DEL 2978.77 T.G 2982.5 AC 30009 TC 300400 AG 30400 AG 310.59 TA 312.89 CT 317.49 CT 320.40 CG 330.17 TG 330.17 TG 330.26 T.DEL 330.26 T.DEL 343.34 CT 35.702 GA 35.903 AG 35.903 AG 35.903 AG 35.904 AG 35.905 AG 3		
TDEL		
28132 G-A		
29100		
29454-29437		
29787		
29825		
30009		
30400 31059 T-A 31059 T-A 31280 C-T 31749 C-T 32040 C-G 33017 T-G 33026 T-DEL 34434 C-T 35179 A 35179 A 35695 G-A 35702 G-A 35983 A G 35983 A G 37411 A-G 38526 C-T 40431 C-A 42054-42055 TT DEL 4783-43784 TTITTINS 45120 C DEL 45567 A-C 46601 A-C 47798 C-A 47798 C-A 47798 C-A 477994 G-C 48680 A-G 50240 C-T 50553 G-A 46880 A-G 50553 G-A 50586 G-T 51322 G-C 51747 A-G 52474 C-G		
30400	30177	A-G
31280 C-T 31280 C-T 31749 C-T 32040 C-G 33017 T-G 33026 T-DEL 34434 C-T 33179 \(\frac{1}{2} \) \(\	30400	
31749 C-T 32040 C-G 33017 T-G 33017 T-G 33026 T-DEL 34434 C-T 35179 A-C 35695 A-A 35702 G-A 35893 A-A 37411 A-G 38526 C-T 40431 C-A 40431 C-A 42054-42055 TT-DEL 43783-43784 TITTTINN 45120 C-DEL 45567 A-C 44560 A-C 44560 A-T 47798 C-A 477994 G-C 48680 A-G 50553 G-A 50553 G-A 50553 G-A 50556 G-T 51322 G-C 51747 A-G 52474 C-G 52733 C-A	31059	T-A
32040 C.G		
33017		
33026		
34434 C.T		
35179 A-C		
35695 35/A 35702 G-X 35702 G-X 35702 G-X 35983 A-G 37411 A-G 38526 C-T 40431 C-A 42054-42055 TT DEL 43783-43784 TTIT INS 45120 C DEL 45567 A-C 46601 A-T 47255 C-G 47758 C-A 47758 C-A 47994 G-C 48440 G-A 48650 T-G 48680 A-G 50240 C-T 50553 G-A 50586 G-T 51322 G-C 51747 A-G 52474 C-G 52733 C-A 52474 C-G 52733 C-A 52734 C-A C-A 52734 C-A		
35702 G-X 35983 A-G 37411 A-G 38526 C-T 40431 C-A 42054-42055 TT DEL 43783-43784 TTTTINS 445120 C-DEL 45567 A-C 46601 A-T 47255 C-G 47758 C-A 47758 C-A 48440 G-A 48680 A-G 48680 A-G 50240 C-T 50553 G-A 50553 G-A 50556 G-T 51322 G-C 51747 A-G 52474 C-G 52733 C-A 52733		
35983		
37411		
38526 C-T 40431 C-A 42054-42055 TT DEL 427054-42055 TT DEL 43783-43784 TTTTTTNS 45120 C DEL 45567 A-C 46601 A-T 47255 C-G 47758 C-A 477994 G-C 48440 G-A 48680 A-G 50240 C-T 50553 G-A 50586 G-T 51322 G-C 51747 A-G 52474 C-G 42793 C-A 477994 G-C 477994		
40431		
A2054-A2055		
43783-43784		
A.C A.C		
46601	45120	C DEL
47255 C-G 47758 C-A 47994 G-C 488400 G-A 48650 T-G 48680 A-G 50240 C-T 50553 G-A 50586 G-T 51322 G-C 51747 A-G 524744 C-G 52733 C-A	45567	A-C
47758 C-A 47994 G-C 48440 G-A 48650 T-G 48660 A-G 50240 C-T 50553 G-A 50586 G-T 51322 G-C 51747 A-G 52474 C-G \$2733 C-A		
47994 G-C 48440 G-A 48650 T-G 48650 T-G 48680 A-G 50240 C-T 50553 G-A 50586 G-T 51322 G-C 51747 A-G		
48840 G-A 48650 T-G 48680 A-G 50240 C-T 50553 G-A 50586 G-T 51322 G-C 51747 A-G 52474 C-G 52733 C-A		
48650 T-G 48680 A-G 50240 C-T 50553 G-A 50586 G-T 51322 G-C 51747 A-G 52733 C-A		
48680 A.G		
50240 C-T		
50553 G.A		
50586 G-T 51322 G-C 51747 A-G 52474 C-G 52733 C-A 1		
51322 G-C 51747 A-G 52474 C-G 52733 C-A		
51747 A-G 52474 C-G 52733 C-A		
52474 C-G 52733 C-A		
52733 C-A		
1 328/3 G-A	52875	G-A
53707 G-A	53707	

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POLYMORPHIC SITE	POLYMORPHISM
4819	A-G
5913	T-C
6225	A-C
6510	T-C
6566	G-A
6618	A-T
7815	A-G
8011	T DEL
8247-58248	TINS
8926	C-G
59406	C-G
9422	G-C
60221-60222	A INS
0656-60657	CA DEL
51162	G-A
51465	G-A
51607	A DEL
51653	T-C
1794-61795	TINS
52061	G-C
52362	T-G
52732	C-G
53364	G-A
3430-63431	GT INS
3754	\ C-T
3785	A-C
53870-63871	A INS
64788	A-G
4962	G _c A
55891	C-V
	G-Q
66675	ATIVINS'
57186-67187	TT INS
7746-67747	
8259	T-Ø
8836	7-C
8976	C-G
72508	T-G
2688	C-G
75323-75324	TINS
5887	\ G-C \ \
7519	T-C
7749	G-A
7908	T-C
8385	\C-G
8592-78593	AG INS
0189	T-G
30279	T DEL \
80989-80990	A INS
31193	T-C
31273	A DEL
32166	G-A
33847	T DEL
4161-84162	CA-GG

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POLYMORPHIC SITE	POLYMORPHISM
IN SEQ ID NO:1	1021110111111111
84,638	T-G
855,26	T-G
85705	G-T
80084	T-C
87635\	T-C
87713	A-C
87892	C-T
88192	T DEL
88528	A-G
89645	A-T
89728	A-G
90088	T-C
91193-91194	2209bp INS
91373	T-C
91433-91434	A INS
91747	G-A
93625	T DEL
95116-95117	T INS
96315	G-A
97981	A-G
98351	TIDEL
99249	C-T
100094-1 00095	AT INS
100647-100648	TTCINS
100047-100048	A 1
101610	C-V
102589	CAN .
103076-1 03077	TATATATATATATA INS (SEQ
1 103070-1 03077	ID NO:19)
103747	T-C \\
105638	A-C \\
107024	C-T
107322	C-T
107858	C-G
109019	A DEL
109579	TDEL
110021	C-A
111251	C-A
111425	G-A
112644	T-A
113001	G-C
113130	C-T
114026	G-A
114250	A DEL
115217	C-G
117995	G-A
118874	A-G
119470	T-C
119646	G-T
120853	C-T
121582	G-A
123576	A-C
125581	C-T
125970	G-T
120,70	

POLYMORPHIC SITE	POLYMORPHISM
IN SEQ ID NO:1	
126197	A-G
1266 2	A DEL
12667%	G-C
128220\128221	A INS
132569	C-T
133572	A-C
134064	T-G
136999	G-A
137784	C-T
138903	G-A
1391 59-1 39100	A INS
140359	G-A
140898	C-T
141313	CDEL
141343	T-C
142148	T-C
142178	C-A
142433-1 42434	ATAGA INS
143783	C-T
144090	¢ -T
144220-144221	A INS /
144725	NA-C
145732-145733	AAAAAAAAAAAA INS (SEQ
143/32-143/33	ID NO:200
147016-147017	CG DEL
147021	G-1X
147536	p ∕G\
148936	T-A
149061	T-C
154341	A-T
154588	G-A
155464	G-A
158574	C-G
160007	C-T
164348	A-T
164499	C-G
166677-166678	AAAG INS
167389	G-A
168506-168507	AGGATGGTCT INS (SEQ ID
	NO:21)
168515	T-C
169413-169414	AA INS
170300-170301	TTGTTGTTGTTG INS (SEQ ID
	NO:22)
170491	G-A
173428	T-C
173642	G-A
173948	T-G
175330	T-C
175836	T-C
176200	G-C
176222	T-C
176524	A-T
176684	G-A

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POLYMORPHIC SITE	POLYMORPHISM
IN SEQ ID NO:1	
\76815	T-C
1∀7049	T-C
17√065	G-T
178285	T-C
179 14-179115	A INS
179200	C-G
17928\ 180023\	C-G G-C
180430	T-C
180773	T-C
180824	T-C
181097	C-T
181183	A-T
182351	C-T
183197	G-A
183623	A-T
183653	G-T
183657	T-G
183795-183796	A INS
184060 V	G-A
184993	G-A
185918	A-G
186036	T-C
186506-186507	TAAC INS
186561-186568	TATTIATT DEL
186690	G DEL
186751	1\(\frac{1}{A}\)
187221	A ¹ G
187260	A-G CTCPDEL
187444-187447 187831-187832	CANS
188638	G-A
188642	C-T
189246	T-C
190340	A-C
190354	A-G
190762	A-G
191260	G-T
193018-193019	AGAT INS
193147	T-G
193196-193197	CINS
193499	C-T
193738	C-G
193984-193985	ACACACAC INS
194064	C-G
194504	A DEL
194734	G-A
194890	A-C
195404	G-A
195693	A-T
196205	G-A
197424	C-T
197513	C-T
197670	G-A

POLYMORPHIC SITE	POLYMORPHISM
IN SEQ ID NO:1	
198055	C-A
198401	C-T
198692	A-G
198780	T DEL
1/99030	T-G
199933	C-T
200027	G-A
200439	T-A
2004\$2	A-G
200472-200483	AATAATAATAAT DEL (SEQ ID
	NO:24)
200559	A-T
200745	A-G
200919	T-A
201816	C-T
201861-201862	42bp INS
202662	T-C
202880	T-C
204341	C-T/\
204768	A-JT \
205284	T/G
207400	Ç -A
208634	ĴT-C
208718	T DEL
208862	/A-C
209419-209420	TYDEL
209802	G-A
209944	c-g\
210299	A-G
211142	G-A
212072	g-A
212146	T-C
212379	G-A \
212637-212639	TCTDEL
212696	T-C
213042	T-A
214192	A-G
214549	T-C
214795	C-T \
214908	T-G
214977	A-G
215769	C-T
215947	C-A
216232	A-G
217478	G-A
219052	T-C
219082-219083	ATATATATATATATATA
	INS
219314	C-A
219327	G-A
219560	C-T
219660	C-T
219889	G-A
220198	G-T

POLYMORPHIC SITE	POLYMORPHISM
IN SEQ ID NO:1	1
220384	G-A
220451-220452	CAAAAA INS
221363	G-A
22 645	G-A
222(119	T-C
222358	A-G
222367	A-C
222686	A-G
222959	T-C
223270-223271	TT DEL
223283	T-C
224964	T-C
225232	A-C
225416	G-C
225486	T-C
226088	A-G
228421	A-G
230047	G-A
230109	G-C
230376	C-G
230394	A-C
231226	A-G
231447	(G-A
231835	A-G
232400-232402	AAA DEL
232402-232403	G INS
232515	₫-c
232703	G-/I
232750	A-Q

70. (New) The isolated polynucleotide of Claim 69, wherein the polymorphic site is at base 61465 of SEQ ID NO:1.

71. (New) The isolated polynucleotide of Claim 69, wherein the polymorphic site is at base 35983 of SEQ ID NO:1.

72. (New) A pair of isolated polynucleotides as in Claim 89.

73. (New) A kit comprising an isolated polynucleotide of Claim 69.

4. (New) A kit comprising at least one pair of isolated polynucleotides as in Claim

75. (New) An isolated polynucleotide comprising at least 18 consecutive bases and up to about 100 consecutive bases of the sequence shown in SEQ ID NOS: 1 or 2, or the complement thereof, wherein said isolated polynucleotide includes at least one polymorphic site selected from the group consisting of polymorphic sites listed in the following table:

POLYMORPHIC SITE IN SEQ ID NO:1	POLYMORPHISM
841	T-C
2662-2663	TT DEL
3767	T-C
3829	C-G
4925-4928	TAAA DEL
5691	C-T
5839	T-C
6011	G-A
6047	C-G
6231	G-A
6643	ADEL
6698	T-2
7186	X-c
7273	G\A
7545-7558	TCACACCGATTGG DEL
	(SEO ID NO:17)
7672	G DE
7933	T-C
8746	T-G \
9115	G-A \
9823	G-A
10027	G-A \
10214	C-T
10828	A-G \
10918	J.C-G
10955	A-G
11524	C-A
11674	A-G
11955	T-C TTT DEL.
13304 13455	G-A
13455	
14416-14417	A INS
15564	C-T T-C
15887	A-G
15904-1 5919	CCAAACTGATCTTTGA DEL
13904-1 3919	(SEQ ID NO:18)
	[(9EQ ID NO:18)

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72.

POLYMORPHIC SITE IN SEQ ID NO:1 T DEL	
16019 T DEL 16211 A-T 17461 A-G 19755 G-A 19949 C-T 20085 C-T 20085 C-T 20366-20367 A INS 20463 C-A 20841 A-T 21117 A-G 21117 A-G 2223 A-C 222786 C-A 23009 G-A 24143 T-A 26175 G-C 621 G-C 17461 A-C 1746	
16211	
17461	
19755 G.A 19755 G.A 19949 C-T 20085 C-T 20085 C-T 20366-20367 A INS 20463 C-A 21050 A-T 21050 A-T 211117 A-G 21837 A-C 22293 A-C 22786 C-A 23009 G-A 24143 T-A 26175 G-C G-C C-C 26175 G-C C-C 26175 G-C C-C C	
19949 C.T 20085 C-T 20866-20367 A INS 20863 C-A 20841 A-T 21059 A-T 21117 A-G 221837 A-C 22293 A-C 23009 G-A 24143 T-A 26175 G-C	
2\(\) 2\(\) 366-20367	
2\(\) 2\(\) 366-20367	
20\(\) 63	
21039 A-T	
21117 A-G	
21837 A-C 22293 A-C 22786 C-A 23009 G-A 24143 T-A C-C	
22293 AC	
22786 C-A 23009 G-A 24143 T-A 26175 G-C	
23009 G-A 24143 T-A 26175 G-C	
24143 T-A 26175 G-C	
26175 G-C	
1 26667 \ C A	
26994 \ T-C	
27838 G.T 27861 T DEL	
28132 G-A	
29100 G-A	
29454-29457 TTTT DEL	
29787 \ T-G	
29825 A-C	
30009 \T-C	
30177 A-G 30400 A-G	
31280 C.T 31749 C-T	
32040 C-G	
33017 T-G	
33026 T DEL	
34434 C-T	
35179 A-C	
35695 G-A	
35702 G-A	
35983 A-G	
37411 A-G	
38526 C-T	
40431 C-A	
42054-42055 TT DEL	
43783-43784 TTTT INS	
45120 C DEL	
45567 A-C	
46601 A-T	$\overline{}$
47255 C-G	
47758 C-A	
47994 G-C	$\neg \neg$
48440 G-A	_ /
48650 T-G	
48680 A-G	

POLYMORPHIC SITE	POLYMORPHISM
IN SEQ ID NO:1	
50240	C-T
50553	G-A
50586	G-T
51322	G-C
51747	A-G
32474	C-G
52733	C-A
52875	G-A
53707	G-A
54819	A-G
55918	T-C
56225	A-C
56510	T-C
56566	G-A
56618	A-T
57815	A-G
58011	T DEL
58247-58248	TINS
58926	C-G
59406	ØG
59422	G-C
60221-60222	/A INS
60656-60657	CA DEL
61162	G-A
61465	G-A
61607	A DEL
61653	T-C
61794-61795	TINS
62061	G-\$\overline{C}
62362	T-G\/
62732	C-9/\
63364	G/A
63430-63431	GT INSV
63754	C-T \
63785	A-C
63870-63871	A INS \
64788	A-G
64962	G-A
65891	C-T
66675	G-C
67186-67187	ATT INS \
67746-67747	TT INS
68259	T-C
68836	T-C
68976	C-G
72508	T-G
72688	C-G
75323-75324	TINS
75887	G-C
77519	T-C
77749	G-A
77908	T-C
78385	C-G
78592-78593	AG INS

POLYMORPHIC SITE	POLYMORPHISM
IN SEQ ID NO:1	T-G
80189	
80279	TDEL
80989-80990	A INS
81193	T-C
81273	A DEL
\82166	G-A
83847	T DEL
84161-84162	CA-GG
84533	A-G
84638	T-G
85526	T-G
85705	G-T
86984	T-C
87655	T-C
87713	A-C
87892	C-T
88192	T DEL
88528	A-G
89645	ANT .
89728	A-G
90088	/T-C
91193-91194	/2209bp IN\$
91373	AT-C
91433-91434	AINS
91747	G-\(\frac{1}{4}\)
93625	TDEL
95116-95117	T INS
96315	G-A
97981	AG
98351	T DEL
99249	C-T
100094-1 00095	TINS
100647-100648	TTC INS
100951	C-T
101610	C-G
102589	(C-T)
103076-1 03077	TATATATATATA INS (SEQ
	ID NO:19)
103747	T-C
105638	A-C
107024	C-T
107322	C-T
107858	C-G
109019	A DEL
109579	TDEL
110021	C-A
111251	C-A
111425	G-A
112644	T-A
113001	G-C
113130	C-T
114026	G-A
114250	A DEL
115217	C-G
113411	100

POLYMORPHIC SITE	POLYMORPHISM
IN SEQ ID NO:1	
117995	G-A
118874	A-G
119470	T-C
V 19646	G-T
120853	C-T
121582	G-A
123576	A-C
125381	C-T
125970	G-T
126197	A-G
126672	A DEL
126672	G-C
128220-128221	A INS
132569	C-T
133572	A-C
134064	T-G _A
136999	G- / (
137784	C- / T
138903	G-A
1391 59-1 39160	≰ INS
140359	ĴG-A
140898	XC-T
141313	(DEL
141343	7-T
142148	T-C\
142178	C-A
142433-1 42434	ATAGN DYS
143783	C-T
144090	C-P
144220-144221	A INS
144725	A-C
145732-145733	AAAAAAAAAAAA INS (SEQ
	ID NO:20)
147016-147017	CG DEL \
147021	G-T
147536	T-G
148936	\T-A \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
149061 154341	A-T
154588	G-A
155464	G-A
158574	C-G
160007	C-T
164348	A-T
164499	C-G
166677-166678	AAAG INS
167389	G-A
168506-168507	AGGATGGTCT INS (SEO ID
100500-100507	NO:21)
168515	T-C
169413-169414	AA INS
170300-170301	TTGTTGTTGTTG INS (SEQ ID
170500-170501	NO:22)
170491	G-A
	1

POLYMORPHIC SITE	POLYMORPHISM
IN SEQ ID NO:1	
173428	T-C
173642	G-A
173948	T-G
175330	T-C
¥75836	T-C
176200	G-C
176222	T-C
176324	A-T
176684	G-A
176813	T-C
177049	T-C
177065	G-T
178285	T-C
179114-179115	A INS
179260	C-G
179281	C-GN
180023	G-C
180430	T-C
180773	T-O
180824	T-d
181097	C-T
181183	A-T
182351	tĉi l
183197	16-A
183623	A
183653	GI
183657	電 /
183795-183796	Alins
184060	G
184993	CA \
185918	AG
186036	Tic
186506-186507	TAACINS
186561-186568	
186690	G DEL
186751	T-A
	A-G
187221	
187260	A-G CTCT DEL
187444-187447	
187831-187832	CINS
188638	G-A
188642	C-T
189246	T-C
190340	A-C
190354	A-G
190762	A-G
191260	G-T
193018-193019	AGAT INS
193147	T-G
193196-193197	C INS
193499	C-T
193738	C-G
193984-193985	ACACACAC INS

POLYMORPHIC SITE	POLYMORPHISM
IN SEQ ID NO:1	TOETMORTHISM
194504	A DEL
194734	G-A
194890	A-C
195404	G-A
195693	A-T
196205	G-A
197424	C-T
197513	C-T
197670	G-A
198055	C-A
198401	C-T
198692	A-G
198780	T DEL
199030\	T-G
199933	C-T
200027	G-A
200439	T-A
200452	A-G
200472-200483	AATAATAATAAT DEL (SEQ ID
	NO:24)
200559	А-Т
200745	A-G \
200919	T-A
201816	C-T
201861-201862	42bp INS
202662	T-C
202880	T-C
204341	C-T
204768	AT
205284	T-O
207400	ÇA \
208634 208718	T-C T DEL
208862	A-C
209419-209420	TT DEL
209802	G-A
209944	C-G
210299	A-G
211142	G-A
212072	6-A
212146	TC
212379	G-A
212637-212639	TCTDEL
212696	T-C
213042	T-A
214192	A-G
214549	T-C
214795	C-T
214908	T-G
214977	A-G
215769	C-T
215947	C-A
216232	A-G
217478	G-A
21/7/0	1 2 3 1

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	POLYMORPHIC SITE	POLYMORPHISM
	IN SEQ ID NO:1	
	219052	T-C
	219082-219083	ATATATATATATATATAT
		INS
(219314	C-A
١	219327	G-A
١	219560	C-T
	219660	C-T
	219889	G-A
	220198	G-T
	220384	G-A
	220451-220452	CAAAAA INS
	221863	G-A
	221645	G-A
	222119	T-C
	222358	A-G
	222367	A-C
	222686	A-G
	222959	T.C TT DEL
	223270-22327	TT DEL
	223283	T-C
	224964	T-C
	225232	A-C
	225416	G-C
	225486	T-C
	226088	A-G
	228421	A-G
	230047	\G A
	230109	&C .
	230376	cle
	230394	A-X
	231226	A-G
	231447	Ģ-A
	231835	A-G
	232400-232402	AAA DEL
	232402-232403	G INS
	232515	6-C
	232703	Ģ-T
	232750	A-G

76. (New) The isolated polynucleotide of Claim 75, wherein the polymorphic site is at base 61465 of SEQ ID NO:1.

77. (New) The isolated polynucleotide of Claim 75, wherein the polymorphic site is at base 35983 of SEQ ID NO:1.

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78. (New) A pair of isolated polynucleotides as in Claim 75.

79. (New) A kit comprising an isolated polynucleotide of Claim 75.

A clean copy of the claims as herein amended is presented as Exhibit A.